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ABSTRACT

Compensatory education funds permit local educational agencies (or school districts) to use a variety of highly specialized materials, resources, and training for the pupils and teachers in eligible schools. These special compensatory services (as individual projects) are systematically assigned on a pupil needs basis. Compensatory education programs have made a significant impact on the achievement characteristics of the pupils served. Although the current level of pupil achievement is not as high as would be expected, significant inroads have been made toward arresting their declining achievement trend. Moreover, there is strong evidence which suggests that compensatory education programs have caused the establishment of viable, prescriptive instructional services. When considered as comprehensive, prescriptive inputs directed toward the needs of the pupils in the eligible schools, these services become systematic efforts made to upgrade the educational program and the level of pupil services of each school. In this behalf, individual compensatory educational projects become the ingredients for augmenting the eligible schools' educational program, as well as special efforts to administer to identified needs. For these reasons, the decision to expand, discontinue, or reduce a single project is not a simple one--the decision has to be made within the context of the total strategy of a school system's program. (Author/JM)

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UNDERSTANDING THE BROADER IMPACT AND IMPLICATIONS OF COMPENSATORY EDUCATION PROGRAMS

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UNDERSTANDING THE BROADER IMPACT AND IMPLICATIONS OF COMPENSATORY EDUCATION PROGRAMS

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Instructional Research and Development

The School District of Philadelphia

Although continuance decisions about compensatory education programs (CEPs) incorporate all benefits achieved, most evaluation reports have dealt only with the outcomes of behavioral, performance, and/or process objectives. Such information is essential when measuring the attainment of program foci but of lesser value when considering the broader impact of a CEP. A component impact analysis procedure (assessment of a program's goals) demonstrated that CEPs (1) produce prescribed instructional subsystems for subgroups within a target population, (2) cause significant changes in the achievement performance patterns of the target children, and (3) permit the development of more effective strategies for allocating program resources.

UNDERSTANDING THE BROADER IMPACT AND IMPLICATIONS OF COMPENSATORY EDUCATION PROGRAMS

Edward K. Brown

Instructional Research and Development[1]

Local school districts, as was observed by Gordon (1), use compensatory education funds to formulate individualized learning experiences for poor and educationally disadvantaged children. They use the aggregate funds to develop individual projects to meet each of the identified needs of the target population. Whether one would call these compensatory education projects prescriptive learning units, as did Gordon (1) and Passow (2), or whether one would define them as categorical service inputs, as did Bissel (3), compensatory education projects represent specified methods for controlling those educational conditions and variables which have tended to prevent poor and educationally disadvantaged children from being successful in school (4).

Formulation of Compensatory Education Projects

Within a school district there are usually three levels of administrators who participate in the development and implementation of compensatory education projects: strategic, operational, instructional.

> Strategic management personnel are those who have the responsibility for making key policy decisions about the goals and directions of compensatory education program expenditures (i.e., Members of the Board of Education, the Superintendent of Schools, Advisory Boards). Their policies establish the framework within which the needs-assessed goals and corresponding implementation procedures of the projects will be predicted.
>
> Operational management personnel are those who have the responsibility for translating the policy plans of strategic management into operational (implementation) practices. It is they who supply the structure to the strategic plans. These persons hold key positions which interface with other essential

school administrators who sustain/maintain the operations of the school district.

Instructional management personnel are those who have the responsibility for defining, developing, and articulating specific programmatic resources (in the form of instructional methods, materials, and staff development). These persons add the "flesh" to the strategic plans and facilitate the realization of the strategic plans at the classroom level (5).

Through joint meetings these personnel determine (a) what kinds of compensatory education projects are most appropriate and (b) how these projects are to be implemented. The number and size of projects implemented depend upon the needs of the children, the nature of the services to be provided, and the number of children to be served. In essence, these decisions translate the funds of a compensatory education program into individual compensatory education projects which are designed to meet the specific needs of the children in the target population.

A Generalized Rule for Project Allocation

Accompanying the decisions to establish compensatory education projects is a generalized rule for allocating the projects to the eligible schools. Because of the varying needs of the children in the target area, eligible schools receive combinations of compensatory education projects. In those schools where pupil needs are few and fall within a narrow range, the number and variety of compensatory education projects provided is relatively small. In those schools where pupil needs are many and diverse, the number and variety of compensatory education projects provided is relatively large and diversified. In essence, the generalized rule represents a programmatic process for establishing optimal learning environments in the target schools through the deployment of compensatory education projects.

DEFINING THE GENERAL EFFECTS

Although it is essential to know whether individual compensatory education projects are reaching their goals, a more fundamental question

raised at the policy-making level is, "Have the compensatory education projects assigned to the schools been effective in improving pupil achievement?" This question, of course raises a more subtle issue, "Have ways or processes been found to effectively administer compensatory education services to the needs of the children in the target population."

The need to know the answers to the above questions is at the crux of the issue about the usefulness of compensatory education programs per se and the necessity for spending federal funds to provide such services. Both Cohen (6) and Wholey (7) have strongly suggested that we need to know more about the general effects of compensatory education programs if we are to meet the broad concerns and circumstances which surround the major decisions to continue or not to continue funds for compensatory education.

Component Impact Analysis

A study was conducted in 1971 to determine whether the compensatory education projects [assigned to 61 eligible Title I elementary schools in Philadelphia] formed intervention strategies which were consistent with the needs of the children in the target population (5). The 61 elementary schools were similar (a) in school enrollments, (b) in average daily attendance rates, (c) in number of teaching positions, (d) in their educationally disadvantaged status, (e) in total school budgets, and (f) the arithmetic performance rates of their pupils. These schools were significantly different (a) in number of low-income children, (b) in number of minority children, (c) in level of Title I funds they received, and (d) in the reading performance rates of the pupils they served.

The findings of the study showed that the allocation of compensatory education projects to the eligible schools formed four well-defined intervention strategies. Each of these intervention strategies or models served

a specific group within the target population. The "net effect" of each intervention strategy was a set of integrated services for increasing each school's ability to improve the achievement of its pupils. Although the level of project service to each intervention model was different, the level of compensatory funds each school received (as compensatory education projects) was directly related to needs of the pupils: schools having the greatest level and variety of needs received the greatest level of services.

Three basic compensatory education factors were also identified. The factors were: Program Density Expenditure Function, General Disadvantaged-Service Expenditure, School Investment Output. The first factor, Program Density Expenditure Function, dealt with the allocation procedures. It strongly suggested that the allocation of program funds according to individual school needs produced more consistent service distributions than did allocations made by traditional formulae. The second of these factors, General Disadvantaged-Service Expenditure, demonstrated the need to designate, in advance, that proportion of the total program fund which must be used to provide direct services for the teaching of reading and arithmetic. The third factor, School Investment Output, showed strong evidence that the level of funds a school receives is directly related to its ability to produce and sustain pupil achievement (5).

Findings of Related Studies

A number of more detailed studies followed which were built around the specific issues raised in previous investigations. First, it became necessary to know more about the characteristics of the children being served by the four intervention models. Second, it became crucial to know more about the "summative" or net effects of the compensatory education projects and whether these summative effects resembled any individual or

collective educational methodology. Third, it became necessary to define and describe how the intervention models were producing improved pupil achievement. And, fourth, it became mandatory that a closer look at the allocation patterns to determine how the funds were affecting the individual schools.

Characteristics of the Children Served

An in-depth study was made of the characteristics of the pupils served by the four intervention models. It was found that the children could be characterized in one of three ways: Low Need Children, Moderate Need Children, High Need Children. (See Table 1) Low Need children (about 13% of the population studied) are pupils who have acquired a reasonable level of achievement, but who could do much better in school if they knew more about themselves and their potentialities. They are pupils who do not need remedial work but who could improve through services provided by enrichment, career education, and/or motivation projects. These are those pupils who are generally called the "late bloomers."

Moderate Need children (about 61% of the population) fall into either of two subgroups. The first group would have pupils who exhibit a high interest in school and school work, but who are unsuccessful in school because they do not receive adequate, positive reinforcements. These pupils need a learning environment in which they can receive scheduled reinforcements. Scheduled reinforcements means "giving the pupil planned repetitions and reviews of major concepts through the use of alternative teaching methods before new materials is presented." The second group would have pupils who cannot successfully perform independent instructional activities because of their difficulties with the spoken and written word. These pupils should be taught reading and arithmetic skills in relatively small

TABLE 1

General Characteristics of Children Being Served

by Compensatory Education Programs

Pupil Need Category	Pupil Characteristics
Low	Pupils who, although performing near national expectations, lack that level of personal incentive and motivation which is required to make them perform at their full capacity or to realize their potentialities/talents in terms of their career aspirations and life goals
Moderate #1	Pupils who require repetitions of instruction in a variety of of ways and in a number of instructional modes. Such repetitions maximize their learning potential by matching their individual learning styles and through constructive reinforcements
Moderate #2	Pupils who must be taught in small groups (4 to 10 pupils). These pupils because of their low proficiency in reading and arithmetic skills cannot successfully perform independent and/or individual instructional activities (i.e., find main ideas, deduce logical or figurative inferences)
High	Pupils who have profound difficulties in learning and who require instruction on an individualized basis. Although no generalized program is meaningful, enough similarity of individual need exists to formulate groups of two or three pupils

groups (4 to 10 pupils).

High Need children (about 26% of the population) are pupils who have profound difficulties in learning. For this reason, they require instructional activities which have been designed to correct specific deficiencies. Although these pupils require individualized instruction, small homogeneous groups can be used in many instances. And, the best results can be achieved when these pupils have a separate learning area or center where they receive the individualized, corrective services.

Achievement Characteristics of Children Served

To learn more about the children in the three need categories, an analysis was made of their achievement characteristics. Table 2 shows the results. From the table we find that the average rate of achievement for all children in May 1970 was about 6.5 months per school year, with the children in the Low Need category exceeding the rate of the others by two months. Accordingly, the rate at which all children fall behind national grade expectation being about 3.8 months per school year. As categories, it was found that Low Need children were behind by three months; the others ranging from eight months to one year behind.

Consequently, even though their rates of achievement were significantly above that of previous years, the majority of the children continued to place below national expectations for two reasons: their initial level of deficit and their less-than-average annual rate of achievement (8).

Prescriptive Instructional Systems

To get a better understanding of what the children were receiving from the combination of Title I projects in their schools, a more detailed study was made of the intervention models identified in 1971. The investigation focused on the codification and cataloging of the actual materials, re-

TABLE 2

Achievement Characteristics of 4,500 Third-, Fourth-, Fifth-, and Sixth-Grade Pupils Being Served by ESEA, Title I Program Funds

Statistic	Pupil Need Category			
		Moderate		
	Low	#1	#2	High
Percent of Population	13.3%	19.1%	41.5%	26.1%
Achievement Status at Grade 3[a]	3 months behind	9 months behind	8 months behind	1 year behind
Average Rate of Achievement[b]	8 months per year	6 months per year	6 months per year	6 months per year
Average Rate of Depression Below National Norms[c]	2 months per year	4 months per year	4 months per year	4 months per year

[a]Status as of May 1970, Iowa Tests of Basic Skills.

[b]Measured over grades 3 through 6 inclusive.

[c]Annual rate between grades 3 through 6 inclusive. The deficits are cumulative from year to year. To obtain the level of depression below national expectation, one adds the cumulative deficit to one's achievement status at grade 3. For example, a pupil in the High Need group would be behind by 1.8 years in grade 5 (4 months X 2 years = 8 months plus 1 year's deficit at grade 3).

sources, and instructional activities used in the projects. These data were gathered from the descriptions of the projects (by both project administrator and evaluators,(9)) extensive visitations in the classrooms (project monitoring), and teacher interviews. This process permitted (a) the development of functional descriptions of the "total services" provided by the projects and (b) the delineation of the services being provided for the pupils and teachers. The results of this investigation are shown in Table 3.

For the Low Need children, the combination of Title I projects represented expenditures for affective, cultural, and career education services. Typically, the pupils receive experiences to broaden their personal and cultural backgrounds and to increase their knowledge and understanding of their career potential and life goals. In addition, teachers received training on how to use the principles of learning motivation and career education. It was expected that these additional materials, knowledges, and skills would improve the teachers' ability to use the pupils' new experiences as vehicles for improving their achievement.

For the Moderate Need children, the combination of Title I projects represented expenditures either to improve the learning experiences of the pupils or to provide intensified instruction in the basic skills. Typically, the pupils received either (a) instruction in a variety of instructional modes or (b) basic skills instruction in fairly small groups. In addition to materials, teachers were receiving training on how to diagnose pupil needs, how to teach subjects in a variety of ways, and how to use more effective classroom management techniques. And, in those cases where the emphasis was on small group instruction, Instructional Aides were provided.

For the High Need children, the combination of Title I projects repre-

TABLE 3

Functional Descriptions of the Characteristics of Compansatory Education Expenditures

and the Programmatic Services Provided Through Such Funds

Pupil Need Category	Characteristic of Program Expenditure	Programmatic Service Inputs	
		For the Pupils	For the Teacher
Low	Expenditures directed toward the improvement of the pupil's attitudes toward himself, his and others cultures, and his career/life goals	Experiences which expand their involvement and knowledge of world cultures, cultural affairs/events, and opportunities for career exploration	Services, materials, and training which increase their ability to understand and apply the principles of learning motivation and career education
Moderate #1	Expenditures directed toward the improvement of the pupil's instructional experiences	An enriched classroom environment where alternative or innovative teaching-learning conditions are provided in whole class and small groups situations	Services, materials, and training which improve their ability to diagnose pupil needs, to teach a subject in a number of ways, and to use more effective classroom management techniques
Moderate #2	Expenditures directed toward the intensification of instruction in the basic skills areas	Well-defined and highly structured instructions in reading and arithmetic, usually in small instructional units (4 to 10 pupils)	Services, materials, and training which improve their ability and capacity to diagnose and prescribe individualized learning experiences, to design and implement small group instruction, and to effectively use instructional aides
High	Expenditures directed toward the establishment of permanent basic skills centers and systems for continuous exposure to individualized instruction	Continuous corrective instruction in a specialized setting on an individual or homogeneous group (2 to 4 pupils) basis by instructional specialists	Assistance from instructional specialist who design and proide corrective programs for their pupils and who provide them with information/materials for improving each child's performance in their classrooms

sented expenditures for the establishment of special learning areas within the eligible schools or independent learning centers. These special areas or centers were operated by instructional specialists and resource personnel who provided individualized, corrective services. Staffs of these facilities diagnosed the special needs of the pupils and prescribed instructional activities, materials, and/or programs. The staff also provided the sending teachers with additional information about their pupils and with methods/materials for improving the children's performance in the classroom. The sites also served as training resources for the sending teachers and for those in adjacent eligible schools.

Pupil Achievement

The impact of the prescriptive instructional systems on pupil achievement was studied in a variety of ways. Since some of the Title I projects were assigned to specific elementary grades, others to all grades, the first evaluation was designed to determine whether the achievement patterns of the pupils changed significantly from year to year. The assumptions were that if the compensatory services were appropriate, and if the teachers were becoming more effective, the achievement patterns of the pupils leaving each grade served should improve from year to year (10).

The reading achievement records of 3,205 third-, fourth-, and fifth-grade pupils of school year 1968-1969 were compared with the records of 3,434 such pupils for school year 1969-1970 (see Table A).[2] The comparisons showed that on a grade-by-grade basis, the proportion of 1969-1970 pupils placing in the first national quartile (between the first and 25th percentiles) was 13% lower than the 1968-1969 level. The 1969-1970 proportions were 5% higher than the 1968-1969 levels in the other three quartiles: quartile 2 (between the 26th and 50th percentiles), quartile 3 (between the

51st and 75th percentiles), and quartile 4 (above the 75th percentile). The greatest increase/decrease in proportions occurred at grade 3.

Analysis of the data by pupil need category gave some interesting results. For the Low Need category, the average change in 1969-1970 output performance of the grades in reading were (a) a 18% decrease of placements in quartile 1 and (b) increases of 1% in quartile 2, of 4% in quartile 3, and of 10% in quartile 4. In arithmetic performance there were (a) a 2% decrease of placements in quartile 1 and (b) increases of 6% in quartile 2, of 3% in quartile 3, and of 16% in quartile 4. (See Table B)

For the first group of the Moderate Need category, the changes in 1969-1970 output performance of the grades in reading were (a) a 14% decrease of placements in quartile 1 and (b) increases of 6% in quartile 2, of 4% in quartile 3, and of 4% in quartile 4. In arithmetic performance there were (a) a 19% decrease of placements in quartile 1 and (b) increases of 7% in quartile 2, of 5% in quartile 3, and of 6% in quartile 4. (See Table C).

For the second group of the Moderate Need category, the changes in 1969-1970 output performance of the grades in reading were (a) a 8% decrease of placements in quartile 1 and (b) increases of 6% in quartile 2, of 6% in quartile 3, and of 2% in quartile 4. In arithmetic performance there were (a) a 14% decrease of placement in quartile 1 and (b) increases of 4% in quartile 2, of 4% in quartile 3, and of 4% in quartile 4. (See Table D)

For the High Need category, the changes in 1969-1970 output performance of grades in reading were (a) a 10% decrease of placements in quartile 1 and (b) increases of 5% in quartile 2, of 4% in quartile 3, and

of 3% in quartile 4. In arithmetic performance there were (a) a 11% decrease of placements in quartile 1 and (b) increases of 4% in quartile 2, and 4% in quartile 3, and of 5% in quartile 4. (See Table E)

Method 2. In 1972 another assessment was made of the changes in reading and arithmetic achievement. The study was designed to see whether the performance rates of rates of improvement were the same for all pupil need categories. The assumption was that if the rates were the same, the prescriptive instructional systems were having a leveling effect. That is, the funds and program services were creating equal educational conditions. Or, stated differently, all pupils, regardless of their status, were gaining skills at the same rate (11). The study showed that as the pupils moved from grade there was no significant difference between the proportion of pupils in each need category who remained at or advanced to the next reading achievement quartile. This was not the case in arithmetic performance. Pupils in the upper quartiles and/or in the Low Need category made better than the average placements.

Method 3. Pupil achievement was assessed in a third way. This method sought to find out how many pupils in each need category could reach an expected reading performance criterion. Because the School District has a special emphasis on reading, the expected performance criterion was set at seven months growth. This rate was fair because it exceeded previous average rates and was a month below the average rate of achievement in non-Title I schools.

The results of this investigation are presented in Table 4. As is shown in the table, 90% of the pupils (N=4,800) achieved or exceeded the expected achievement criterion. Within pupil need categories, we see that only 5% of the pupils in the Low Need category did not reach criterion;

TABLE 4

Effect of Intervention Services on the Rate of Reading Achievement of All Pupils[a]

Performance Classification	Pupil Need Category				Total All Categories
		Moderate			
	Low	#1	#2	High	
Above Expectation	7%	10%	10%	26%	10%
Expected (7 Months)	88%	81%	80%	45%	80%
Below Expectation	5%	9%	10%	29%	10%

[a]Iowa Tests of Basic Skills, May 1971.

10% in the Moderate Need category. However, in the High Need category an interesting split was noticed. There were as many pupils exceeding the criterion as there were falling below the criterion. This finding suggests that the individualization practices in at least 25% of the schools were not effective.

Characteristics of the Financial Resources

To determine the relationship between the financial level of the assigned compensatory education projects and the achievement outcomes of the prescriptive instructional systems, an in-depth follow-up study (12) was made of the cost analysis data presented in the original study of 1971. As was specified in the document, three kinds of specific services and/or resources were provided by the individual projects: Basic Skills projects (BAS); services in instructional areas other than BAS (OIA); and services which support the instructional activities of the schools or which provide special resource assistance to the pupils (SUP).

In the subsequent study, the distribution of these services was analyzed by a more refined content analysis procedure. In addition to ascertaining how many service projects were assigned to the schools and describing the content of each project, the distributions of the project services within each prescriptive instructional system were determined (see Table F). It was found that the majority of the Low Need schools (90%) had an average of one OIA project; 50% of them had one SUP project. In the first group of the Moderate Need schools, 64% had an average of two OIA projects; 73% had two SUP projects. In the second group in the Moderate Need schools, the majority of the schools (72%) had an average of one BAS project; 84% had three OIA projects; and 80% had two SUP projects. All of the High Need schools (100%) had an average of one BAS project; 67% had four OIA projects;

and all had two SUP projects.

In terms of categorical funds, an average of 41% of the funds to Low Need schools went for OIA services and 59% for SUP services. In the first group of Moderate Need schools, an average of 13% of the funds went for BAS services; 32% for OIA services; and 55% for SUP services. In the second group of Moderate Need schools, an average of 36% of the funds went for BAS services; 25% for OIA services; and 39% for SUP services. In High Need schools an average of 41% of the funds went for BAS services; 25% for OIA services; and 34% for SUP services. When comparing the relationship between the proportion of funds spent for the three kinds of services and levels of achievement within the prescriptive instructional systems, it was found that the ratio of expenditure for the services was a more important factor of success than absolute levels of funding. From these data on the Moderate and High Need schools, it was possible to identify and quantify the optimal mixes of services: that is, what proportional mixes produce the highest level of achievement (see Table G).

Essentially, the projected changes produce, across all prescriptive instructional systems, (a) increased expenditures for BAS services and (b) decreased expenditures for OIA and SUP services (see Table G). These basic changes in proportions of funds spent for the three kinds of service represent refinements in the original allocation patterns, thereby, changing the initial allocations from a qualitative assignment of program resources to a quantitative assignment procedure.

Discussion

Compensatory education funds permit local educational agencies (or school districts) to develop and implement a variety of highly specialized materials, resources, and training for the pupils and teachers in eligible schools. Through the systematic assignment of these special compensatory services (as individual projects) on a pupil needs basis, prescriptive instructional systems are created within the eligible schools. The focus of a prescriptive instructional system is best described through the singular condition it provides to the pupils and teachers from the amalgum or mixture of services it comprises (from the assigned projects).

In the main, the original assignments of project services to the eligible schools are based upon the needs of the children. Where the needs are the greatest, the greatest number and variety of project services are provided. This process, although seemingly subjective, follows the need-characteristics pattern of all the pupils in a given eligible school, as well as a procedure for "needs-differentiation." Needs-differentiation means a process of matching the planned (outcomes of a project(s)) with desired pupil changes. The concept of needs-differentiation is not new, Bloom (13) describes such a process when he talks about the ability of three qualitative variables to increase the certainty of school achievement. He concluded that the control of these variables (through administrative practices) could improve a school's potential for achievement by 72%.

To monitor the effectiveness of the individual projects, the objectives of the projects need to be evaluated. From these results, assistance can be given to improve the services provided by the projects. This process of continuous assessment has the net effect of assisting the projects to reach their optimum level of service. Moreover, once the individual projects

demonstrate that they are at a maximum level of performance, school management is in a position to consider which projects deliver the highest rate of effective service(14). That is, which projects produce the best results (most cost-effective).

Change Constraints

Unfortunately, the decisions for massive change and the formulation of a mechanism for instituting the desired change is constrained by two interrelated factors: changes in school composition and constrained budgets. Each of these most crucial factors will be discussed in more detail.

Changes in school composition. Although school administrators are aware of the effects which changes in the composition of schools have on planned educational programs, the relationship between these effects and the ability of compensatory education programs to improve pupil achievement has not been articulated. First of all, it has been demonstrated that the original allocation of compensatory project services to eligible schools is based upon the perceived needs of the pupil population in the schools at the time of the project issuance. Further, it was shown that the kinds of services provided are in the form of a comprehensive instructional system, wherein the pupils receive improved experiences and instruction, the teachers receive specialized training, and the schools receive additional materials and resources. And, it was shown that the systematic inputs from the compensatory projects cause the achievement of the children in the target population to improve significantly--both in terms of annual growth, and in terms of improved performance output from the grades.

Further evidence seems to indicate that although a school within any given need group is successful today, its effectiveness tomorrow is always

threatened by major changes in the composition of the pupil population it has to serve. To illustrate, suppose the composition of a school changes from one having a majority of Low Need pupils to one having a majority of High Need pupils. If it did, we can easily see from the previous descriptions that the combination and composition of the compensatory projects serving the original group would be highly inappropriate for the new pupil population. Services provided to the Low Need group focuses on the need to improve the attitude, career awareness, and self-motivation of the pupils whereas the needs for the High Need group is for corrective, individualized programs. In essence, a misalignment exists between the resources and services available within the school, and the needs of the new pupil population.

How real is the illustration? Within the last decade, the pupil composition of the eligible schools (as well as in all schools) has changed considerably (see Table 5). The enrollment of low-income children in Low Need schools has increased by an average of 132%; by an average of 129% in Moderate Need schools; and by 76% in High Need schools. These changes are tantamount to adding four more classes of disadvantaged children to a Low Need school, nine classes to a Moderate Need school, and ten classes to a High Need school. The question as to whether these additional pupils have caused the major emphasis of the services to the schools to change has to be considerated. However, it would appear that the changes in school characteristics would be categorical--that is, moving into one of the other established need categories.

Constrained budgets. If such a misalignment of services has occurred, what actions should be taken? An obvious, but simplistic, solution is to

TABLE 5

Average Changes in the Characteristics of Pupil Populations Within Eligible Elementary Schools

Statistic	Low Need	Moderate Need		High Need
		#1	#2	
Increase in Low-Income Enrolment[a]	132%	154%	103%	76%
Increased Change As Additional Classes[b]	4	9	8	10

[a]Difference between 1970 and 1960 census counts

[b]Using 35 pupils as average class size. Fractions greater than one-half are considered a full class.

reallocate resources. But what resources can be reallocated? Those elements of a service which are immediately transferable are its non-consumable materials--not the experience and acquired expertise of the teachers nor the intrinsic mechanism and processes for the effective use of resources which have been derived from the interactions of the staff. Therefore, indiscriminate transfer and/or reductions in the materials and resources established at one school to shore-up the educational services to another is detrimental to the purpose of compensatory education. Such actions would have the net effect:

(a) of destroying those prescriptive instructional systems that had already been established within a school system,

(b) of increasing the probability that the benefits the children received from the excluded services to be lost, and

(c) of delaying the impact of the compensatory program by necessitating the creation and implementation of new sets/combinations of prescribed instructional systems whose viability is unknown (4).

A better solution would be to create a new level of funding. These additional funds are essential if the realignment of compensatory services are to be made within a school district. What would these additional funds do? These new funds would permit a school to orderly phase-out one prescriptive instructional system and become firmly established in another (in the least amount of time). The funds would serve as a transitional budget when the realignments dictate a need for new materials, special resources, and/or teacher training. Funds used in this manner would meet the criteria of the "cash flow" principle, where unrestricted funds would be above and beyond the categorical level of the contracted services. How large would the fund be? Although a sliding scale would be undoubtedly used, an estimated increase of about 5% (above the annual rate of inflation) would be reasonable.

Conclusion and Implications

Compensatory education programs have made a significant impact on the achievement characteristics of the pupils served. Although the current level of pupil achievement is not as high as would be expected, significant inroads have been made toward arresting their declining achievement trend. Moreover, there is strong evidence which suggests that compensatory education programs have caused the establishment of viable, prescriptive instructional services. When considered as comprehensive, prescriptive inputs directed toward the needs of the pupils in the eligible schools, these services become systematic efforts made to upgrade the educational program and the level of pupil services of each school. In this behalf, individual compensatory educational projects become the ingredients for augmenting the eligible schools' education program, as well as special efforts to administer to identified needs. For these reasons, the decision to expand, discontinue, or reduce a single project is not a simple one--the decision has to be made within the context of the total strategy of a school system's program.

There is also strong evidence which suggests that greater levels of pupil achievement could be achieved if additional compensatory funds were available to school districts to make more immediate modifications in the allocation patterns of the schools. Most of the modifications would arise out (a) of dramatic changes in the schools' pupil populations, and (b) of the realistic need to increase the pupils' annual rates of achievement to that of more than one year's growth per school year. These changes could insure that the proper alignments be maintained between school services and pupil needs. And, that the annual rate of pupil achievement be improved through internal modifications within established prescriptive instructional systems.

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Footnotes

1. This study was partially funded through the Office of Federal Programs (USOE, Grant #48-0043-51-011-01), Thomas C. Rosica, Executive Director.

2. Statistical tables are situated, in alphabetical order, at the end of the text. Only those data of a descriptive nature are contained within the text.

TABLE A

Comparisons of the Distribution of Reading Achievement in Two Consecutive Years of Grade 3, 4, and 5 Pupils (in percent of pupils sampled at each grade)

End of Grade	School Year	Total Pupils In Sample At Each Grade	National Achievement Quartile(Q) 1-25 (Q_1)	26-50 (Q_2)	51-75 (Q_3)	76-100 (Q_4)
3	1968-69	916	73.5%	19.0%	4.9%	2.6%
	1969-70	1080	58.0	23.1	11.3	7.6
4	1968-69	1123	83.2	10.3	5.3	1.2
	1969-70	1222	71.2	16.5	7.4	4.9
5	1968-69	1166	79.6	13.1	6.0	1.3
	1969-70	1232	69.2	16.4	8.9	5.5

TABLE B

Distribution of Reading and Arithmetic Achievement Performance Status of Low Need Pupils at the End of Grades 3, 4, and 5 (in percent of pupils sampled at each grade)

End of Grade	School Year	Number of Pupils in Sample	National Achievement Quartile(Q) 1-25 (Q_1)	26-50 (Q_2)	51-75 (Q_3)	76-100 (Q_4)
Reading Performance Status						
3	1968-69	159	53%	30%	9%	8%
	1969-70	198	39	27	20	14
4	1968-69	205	60%	19%	16%	5%
	1969-70	203	43	26	15	16
5	1968-69	207	60%	19%	17%	4%
	1969-70	241	48	20	16	16
Arithmetic Performance Status						
3	1968-69	156	49%	29%	16%	6%
	1969-70	192	43	14	19	24
4	1968-69	204	53%	24%	20%	3%
	1969-70	200	35	24	23	18
5	1968-69	207	56%	23%	15%	6%
	1969-70	231	43	19	19	19

TABLE C

Distribution of Reading and Arithmetic Achievement

Performance Status of Moderate Need (#1) Pupils

at the End of Grades 3, 4, and 5

(in percent of pupils sampled at each grade)

End of Grade	School Year	Number of Pupils in Sample	National Achievement Quartile (Q) 1-25 (Q_1)	26-50 (Q_2)	51-75 (Q_3)	76-100 (Q_4)
			Reading Performance Status			
3	1968-69	177	73%	19%	6%	1%
	1969-70	216	66	20	8	6
4	1968-69	191	87%	9%	3%	1%
	1969-70	221	67	21	9	4
5	1968-69	215	86%	11%	3%	0%
	1969-70	210	71	17	8	4
			Arithmetic Performance Status			
3	1968-69	176	81%	15%	3%	1%
	1969-70	216	60	17	11	12
4	1968-69	191	82%	14%	3%	2%
	1969-70	202	66	20	10	4
5	1968-69	215	82%	11%	7%	0%
	1969-70	204	63	24	7	5

TABLE D

Distribution of Reading and Arithmetic Achievement Performance Status of Moderate Need (#2) Pupils at the End of Grades 3, 4, and 5 (in percent of pupils sampled at each grade)

End of Grade	School Year	Number of Pupils in Sample	National Achievement Quartile(Q) 1-25 (Q_1)	26-50 (Q_2)	51-75 (Q_3)	76-100 (Q_4)
			Reading Performance Status			
3	1968-69	360	82%	14%	2%	2%
	1969-70	446	64	22	9	4
4	1968-69	388	89%	8%	3%	0%
	1969-70	477	81	12	5	2
5	1968-69	441	86%	10%	3%	0%
	1969-70	456	77	15	6	2
			Arithmetic Performance Status			
3	1968-69	355	83%	12%	4%	1%
	1969-70	414	62	18	9	10
4	1968-69	388	87%	10%	3%	0%
	1969-70	459	73	14	9	4
5	1968-69	441	83%	12%	4%	1%
	1969-70	440	77	14	7	2

TABLE E

Distribution of Reading and Arithmetic Achievement

Performance Status of High Need Pupils

at the End of Grades 3, 4, and 5

(in percent of pupils sampled at each grade)

End of Grade	School Year	Number of Pupils in Sample	National Achievement Quartile(Q) 1-25 (Q_1)	26-50 (Q_2)	51-75 (Q_3)	76-100 (Q_4)
			Reading Performance Status			
3	1968-69	220	73	21%	5%	2%
	1969-70	300	59	26	12	3
4	1968-69	339	89%	8%	3%	0%
	1969-70	321	77	14	6	3
5	1968-69	303	85%	10%	4%	1%
	1969-70	340	78	14	6	2
			Arithmetic Performance Status			
3	1968-69	225	81%	12%	7%	0%
	1969-70	287	64	15	12	9
4	1968-69	337	86%	10%	4%	0%
	1969-70	315	69	19	8	4
5	1968-69	303	83%	13%	4%	0%
	1969-70	341	73	16	8	3

TABLE F

Number and Distribution of Compensatory Education Services (As Projects) Between and Within 61 Elementary Schools Classified by Pupil Need Category

Pupil Need Category	Number of Schools in Sample	Average Number of Projects Per School	Characteristics of the Service Inputs			Number and Percent of Schools with the Specified Level of Service[a]		
			BAS Projects	OIA Projects	SUP Projects	BAS Projects	OIA Projects	SUP Projects
Low	10	2	--	1	1	--	9 (90%)	5 (50%)
Moderate #1	11	4	--	2	2	2[a] (18%)	7 (64%)	8 (73%)
#2	25	6	1	3	2	18 (72%)	21 (84%)	20 (80%)
High	15	7	1	4	2	15 (100%)	10 (67%)	15 (100%)

LEGEND: BAS=Basic Skills--services to improve reading and arithmetic skills; OIA=Other Instructional Areas--services in instructional areas other than BAS; SUP=Supportive Services--services which support the instructional activities of the schools (i.e., supervisors) and special assistance to the pupils (i.e., counselor aides).

[a]Schools having more than the specified levels are included.

TABLE G

Comparisons Between the Actual and Projected Expenditures of Designated Program Funds in Terms of Services for the Pupil Need Groups

Need Category	Source of Information	Proportion of Expenditure		
		BAS Services	OIA Services	SUP Services
Low	Actual	--	41%	59%
	Projected	10%	45%	45%
Moderate				
#1	Actual	13%	32%	55%
	Projected	26%	25%	49%
#2	Actual	36%	25%	39%
	Projected	52%	20%	58%
High	Actual	41%	25%	34%
	Projected	60%	20%	20%